CLAIMS

1-15. (canceled)

16. (new) An automated method for communicating packets of data with predetermined packet sizes over a communication channel from a transmitter to a receiver, the automated method comprising:

(a) characterizing initial interference in the communication channel;

(b) selecting a first maximum frame transmission time based on the characterized initial interference;

(c) selecting a first data rate and a first frame size for a first packet based on the first maximum frame transmission time;

(d) fragmenting the first packet into one or more frames based on the first frame size;

(e) transmitting the one or more frames of the first packet at the first data rate, such that transmission duration of each frame of the first packet is less than the first maximum frame transmission time;

(f) characterizing subsequent interference in the communication channel;

(g) selecting a second maximum frame transmission time based on the characterized subsequent interference, wherein the second maximum frame transmission time is different from the first maximum frame transmission time;

(h) selecting a second data rate and a second frame size for a second packet based on the second maximum frame transmission time;

(i) fragmenting the second packet into one or more frames based on the second frame size; and

(j) transmitting the one or more frames of the second packet at the second data rate, such that transmission duration of each frame of the second packet is less than the second maximum frame transmission time.

17. (new) The automated method of claim 16, wherein at least one of (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size.

18. (new) The automated method of claim 17, wherein the second data rate is the same as the first data rate.

19. (new) The automated method of claim 17, wherein the second frame size is the same as the first frame size.

20. (new) The automated method of claim 17, wherein (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size.

21. (new) The automated method of claim 16, wherein:

step (c) comprises selecting the first data rate and the first frame size from a first table of two or more combinations of data rates and frame sizes corresponding to the first maximum frame transmission time; and

step (h) comprises selecting the second data rate and the second frame size from a second table of two or more combinations of data rates and frame sizes corresponding to the second maximum frame transmission time, wherein the first table is different from the second table.

22. (new) The automated method of claim 21, wherein:

the first table corresponds to the characterized initial interference; and

the second table corresponds to the characterized subsequent interference.

23. (new) The automated method of claim 21, wherein:
the first table corresponds to an IEEE 802.11 communication system operating collocated with an operating Bluetooth system; and
the second table corresponds to the IEEE 802.11 communication system operating near one or more operating microwave ovens.

24. (new) The automated method of claim 16, further comprising the steps of:
(k) selecting a third data rate and a third frame size for a third packet based on the second maximum frame transmission time, wherein the third data rate is different from the second data rate;
(l) fragmenting the third packet into one or more frames based on the third frame size; and
(m) transmitting the one or more frames of the third packet at the third data rate, such that the transmission duration of each frame of the third packet is less than the second maximum frame transmission time.

25. (new) The automated method of claim 24, wherein:
steps (k)-(m) are implemented after determining that transmission of the one or more frames of the second packet at the second data rate was not successful; and
the third data rate is lower than the second data rate.

26. (new) The automated method of claim 25, wherein the third frame size is the same as the second frame size.

27. (new) A transmitter for communicating packets of data with predetermined packet sizes over a communication channel to a receiver, the transmitter comprising a processor and a memory connected to the processor and adapted to store different combinations of data rates and frame sizes, the processor adapted to:
(a) characterize initial interference in the communication channel;
(b) select a first maximum frame transmission time based on the characterized initial interference;
(c) select a first data rate and a first frame size for a first packet based on the first maximum frame transmission time;
(d) fragment the first packet into one or more frames based on the first frame size, wherein the transmitter is adapted to transmit the one or more frames of the first packet at the first data rate, such that transmission duration of each frame of the first packet is less than the first maximum frame transmission time;
(e) characterize subsequent interference in the communication channel;
(f) select a second maximum frame transmission time based on the characterized subsequent interference, wherein the second maximum frame transmission time is different from the first maximum frame transmission time;
(g) select a second data rate and a second frame size for a second packet based on the second maximum frame transmission time;
(h) fragment the second packet into one or more frames based on the second frame size, wherein the transmitter is adapted to transmit the one or more frames of the second packet at the second data rate, such that transmission duration of each frame of the second packet is less than the second maximum frame transmission time.

28. (new) The transmitter of claim 27, wherein at least one of (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size.

29. (new) The transmitter of claim 28, wherein the second data rate is the same as the first data rate.

30. (new) The transmitter of claim 28, wherein the second frame size is the same as the first frame size.

31. (new) The transmitter of claim 28, wherein (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size.

32. (new) The transmitter of claim 27, wherein the processor is adapted to:

select the first data rate and the first frame size from a first table of two or more combinations of data rates and frame sizes corresponding to the first maximum frame transmission time; and

select the second data rate and the second frame size from a second table of two or more combinations of data rates and frame sizes corresponding to the second maximum frame transmission time, wherein:

the first table is different from the second table; and

the first and second tables are stored in the memory.

33. (new) The transmitter of claim 32, wherein:

the first table corresponds to the characterized initial interference; and

the second table corresponds to the characterized subsequent interference.

34. (new) The transmitter of claim 32, wherein:

the first table corresponds to an IEEE 802.11 communication system operating collocated with an operating Bluetooth system; and

the second table corresponds to the IEEE 802.11 communication system operating near one or more operating microwave ovens.

35. (new) The transmitter of claim 27, wherein the processor is further adapted to:

(i) select a third data rate and a third frame size for a third packet based on the second maximum frame transmission time, wherein the third data rate is different from the second data rate;

(j) fragment the third packet into one or more frames based on the third frame size, wherein the transmitter is adapted to transmit the one or more frames of the third packet at the third data rate, such that the transmission duration of each frame of the third packet is less than the second maximum frame transmission time.

36. (new) The transmitter of claim 35, wherein:

the processor is adapted to implement the selection of (i) and the fragmentation of (j) after determining that transmission of the one or more frames of the second packet at the second data rate was not successful; and

the third data rate is lower than the second data rate.

37. (new) The transmitter of claim 36, wherein the third frame size is the same as the second frame size.

38. (new) A transmitter for communicating packets of data with predetermined packet sizes over a communication channel to a receiver, the transmitter comprising:

a memory adapted to store a plurality of different tables, each table comprising two or more combinations of date rates and frame sizes and each table corresponding to a different maximum frame transmission time; and

a processor adapted to:

(a) characterize interference in the communication channel;

(b) select a first table of the plurality of tables based on the characterized interference;

(c) select, from the first table, a first combination of a first data rate and a first frame size for a first packet; and

(d) fragment the first packet into one or more frames based on the first frame size, wherein the transmitter is adapted to transmit the one or more frames of the first packet at the first data rate, such that transmission duration of each frame of the first packet is less than the maximum frame transmission time corresponding to the first table.

39. (new) The transmitter of claim 38, wherein:

the first table further comprises a second combination of a second data rate and a second frame size;

the first data rate is different from the second data rate; and

the first frame size is the same as the second frame size.

40. (new) The transmitter of claim 38, wherein the processor is further adapted to:

(e) select, from the first table, a second combination of a second data rate and a second frame size for a second packet; and

(f) fragment the second packet into one or more frames based on the second frame size, wherein the transmitter is adapted to transmit the one or more frames of the second packet at the second data rate, such that the transmission duration of each frame of the second packet is less than the maximum frame transmission time corresponding to the first table.

41. (new) The transmitter of claim 40, wherein:

the processor is adapted to implement the selection of (e) and the fragmentation of (f) after determining that transmission of the one or more frames of the first packet at the first data rate was not successful; and

the second data rate is lower than the first data rate.

42. (new) The transmitter of claim 41, wherein the second frame size is the same as the first frame size.

43. (new) The transmitter of claim 38, wherein the processor is further adapted to:

(e) re-characterize the interference in the communication channel;

(f) select a second table of the plurality of tables based on the re-characterized interference;

(g) select, from the second table, a second combination of a second data rate and a second frame size for a second packet; and

(h) fragment the second packet into one or more frames based on the second frame size, wherein:

the transmitter is adapted to transmit the one or more frames of the second packet at the second data rate, such that the transmission duration of each frame of the second packet is less than the maximum frame transmission time corresponding to the second table; and

the maximum transmission time corresponding to the second table is different from the maximum transmission time corresponding to the first table.

44. (new) The transmitter of claim 43, wherein:

the first table corresponds to an IEEE 802.11 communication system operating collocated with an operating Bluetooth system; and

the second table corresponds to the IEEE 802.11 communication system operating near one or more operating microwave ovens.